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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,717	01/12/2000	Norman C Chan	4366-5	7386
48500	7590	02/09/2005	EXAMINER	
SHERIDAN ROSS P.C. 1560 BROADWAY, SUITE 1200 DENVER, CO 80202			SINGH, RAMNANDAN P	
			ART UNIT	PAPER NUMBER
			2644	
DATE MAILED: 02/09/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/482,717

Applicant(s)

CHAN ET AL.

Examiner

Ramnandan Singh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 21-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 21-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 02, 2004 has been entered.

2. **Status of Claims**

Claims 16-20 are cancelled.

Claims 1-4, 11-12, 21-22 and 24 are amended.

New claims 32-34 are added.

Claims 1-15, 21-34 are pending.

Drawings

3. The amendment to Fig. 4 received on April 27, 2004 is approved .

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 1-2, 11-12, 21 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 recites the limitation (f) “thereafter monitoring the first external transmission medium for at least one of echo cancellation activity and echo energy during the communication connection between the first user device” on page 3, lines 17-19. The “thereafter” (i.e. after discontinuing the allocation of the first echo canceller unit) monitoring is not enabled (see Applicant's Fig. 3, step 112). A similar thing holds for claims 2, 11, 12, and 21.

Claim 32 recites the limitation “wherein the at least one of echo cancellation activity and echo energy includes both echo cancellation activity and echo energy” in lines 1-2. Since the call classifier detects echo energy levels **only** [Applicant's specification, p. 12, lines 17-18], detecting both the echo cancellation activity and the echo energy level simultaneously is not enabled. A similar thing holds for claims 33 and 34.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 7-9, 11-12, 14, 21-23, 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Dunn et al [US 6,580,793 B1].

Regarding claim 1, Dunn et al teach a method and apparatus for echo cancellation within a switching center of a communication network shown in Figs. 1, 4 [col. 5, line 57 to col. 6, line 3; col. 9, line 52 to col. 10, line 13]. The method comprises the steps of: providing a pool of echo cancellers within the switching center [Fig. 4; col. 5, lines 8-13; col. 3, lines 54-63; col. 8, lines 24-39; col. 11, lines 5-16]; coupling a "near end" 116 (i.e. local user) with a "far end" 112 (i.e. local user) [Fig. 1; col. 5, lines 48-56]; monitoring echo cancellation activity and echo energy during the communication connection; and activating/deactivating an echo canceller using an echo controller 142 [col. 4, lines 25-59] wherein the echo controller includes an echo detector 158, as shown in Fig. 2., to detect echo in a signal [Figs. 1, 2, 4; col. 7 line 27 to col. 9, line 40]. Further, Fig. 3 depicts a flow chart for assigning and discontinuing of an echo canceller [col. 10, line 14 to col. 12, line 59].

Claim 21 is essentially similar to Claim 1 and is rejected for the reasons stated above apropos of Claim 1.

Regarding Claims 22-23, the limitations are shown above.

Claim 11 is also essentially similar to Claim except for a switch for selectively coupling individual first ports to individual second ports. For this, see [Dunn et al; select switch 414 in Fig. 4] .

Regarding Claim 2, Dunn et al teach that the far-end and near-end communications devices, as shown in Figs. 1-2, 4, could be any devices that require circuit interconnection of the type shown , and may, for example, be the trunk interface circuits of first and second telephone switching systems [col. 5, lines 64-67].

Claim 12 is essentially similar to Claim 2 except for a plurality of trunks. Dunn et al teaches interface circuits 144 and 148 that accommodate a variety of communications circuits, including analog lines and trunks, ISDN lines, T-carrier facilities, and the like [col. 6, lines 60-65; col. 11, lines5-16].

Regarding Claim 7, Dunn et al teach detecting echo cancellation activity using echo detector 158 shown in Fig. 2 [col. 7, line 27 to col. 8, line 6], and allocating an echo canceller as shown in Fig. 3.

Claim 28 is essentially similar to Claim 7 and is rejected for the reasons as stated above.

Regarding Claim 8, Dunn et al teach a pool of echo cancellers that includes a multi-channel hardware echo cancellation device [Fig. 4; col. 6, lines 33-41; col. 8, lines 24-44].

Claim 14 is essentially similar to Claim 8 and is rejected for the reasons stated above.

Claim 29 is essentially similar to Claim 8 except for allocating an echo canceller. Dunn et al teaches allocating an echo canceller [Fig. 3; col. 10, lines 48-55].

Regarding Claim 9, Dunn et al teach a pool of echo cancellers that includes a programmable digital signal processing (DSP) device [Fig. 4; col. 5, lines 8-13; col. 8, lines 24-44; col. 9, lines 41-51; col. 11, lines 5-16].

Claim 30 is essentially similar to Claim 9 and is rejected for the reasons stated above.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 3-4, 13, 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to Claims 2, 11, 23 above.

Regarding Claims 3, 4, Dunn et al teach that the far-end and near-end communications devices, as shown in Figs. 1-2, 4, **could be any devices** that require circuit interconnection of the type shown, and may, for example, be **the trunk interface** circuits of first and second telephone switching systems [col. 5, lines 64-67; col. 6, lines 25-33].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to connect a user device that includes a telephone unit providing a communication path between the telephone unit and the trunk in order to avail the telecommunications system 110 [Dunn et al; col. 1, lines 7-11].

Claims 13 and 24-25 are essentially similar to Claims 3-4 and are rejected for the reasons stated above.

10. Claims 5 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to claims 1 and 23 above, and further in view of Toshiyuki [JP-05268121].

Regarding Claim 5, Dunn et al do not teach detecting an echo by

perceiving audibly. However, it is well known in the art .

Toshiyuki teaches applying an echo canceller when the talking quality is deteriorated. Under this situation, the subscriber operates a pushbutton to implement the adaptive operation of the echo canceller 22 [Abstract].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the technique of Toshiyuki to Dunn et al to realize stable talking quality by reducing the deterioration in the speech quality by an echo canceller, and thereby improve the communication.

Claim 26 is essentially similar to Claim 5 and is rejected for the reasons stated above.

11. Claims 6, 10, 15, 27, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to claims 1, 11, 21 above, and further in view of Pruett et al [US H1,885], and further in view of the Admitted Prior Art (APA) [Applicant's specification, page 12, line 17 thru page 13, line 6].

Regarding claims 6 and 10, Dunn et al do not teach expressly allocating a call

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classifier and receiving an indication from the call classifier that echoes above a predetermined power level are being received from the first external transmission medium.

Pruett et al teach a method and apparatus for echo cancellation within a switching center of a communication network shown in Figs. 1, 3, 6 [col. 2, line 50 to col. 3, line 7]. Fig. 3 illustrates an echo canceller control system 300 to control a pool of echo canceller modules in a telecommunication switch system [col. 6, lines 9-55]. An echo canceller module controller is formed by **call processing system** 306, switching module 302, and bank controller 310 [col. 6, line 56 to col. 7, line 22]. Further, Fig. 4b illustrates an agent networking method [col. 8, lines 5-44]. Fig. 5 provides a flow chart for a method 500 for controlling an echo canceller module in a trunk. The method 500 can be used by a telecommunications system to control the operation of an echo canceller module so as to provide echo cancellation only when required, and to prevent the application of echo cancellation to a signal that does not contain any echo [col. 9, line 28 to col. 10, line 56; col. 12, lines 43-54]. Fig. 5 at steps 508 and 512 indicates that the echo canceller is **turned on if the signaling data indicates echo**. Further, Pruett et al teach a call processor 306 that includes an out-of-band signaling agent 316, an agent networking system 318, an in-band signaling agent 320, and signaling interface modules 314; wherein each signaling interface module 314 is operable to receive control and signaling data from an external source, such as the

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switching network [col. 6, lines 9-18; col. 6, line 37 to col. 7, line 22; col. 9, lines 6-18]; and allocating an echo canceller as needed [Fig. 5; col. 9, lines 29-60].

Although Pruett et al teach expressly allocating the call processor (or classifier) and determining whether a source of echo may be present in a telecommunication channel [col. 5, lines 9-32], they do not teach expressly receiving an indication from the call classifier that echoes above a predetermined power level are being received from the first external transmission medium. However, the method of determining an echo power level is well-known in the art.

The APA of the Applicant teaches determining the echo energy levels using a call classifier [Applicant's specification, page 12, line 17 thru page 13, line 6].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the call classifier of Pruett et al with Dunn et al in order to provide integrated telecommunication services by transferring the data indicating the existence of an echo signal to an echo canceller from the call classifier [Pruett et al; col. 9, lines 12-18], and apply the method of the APA of Pruett et al to detect the echo energy above a predetermined value using the call classifier of Pruett et al in order to transfer this information to the echo canceller to cancel echoes [Pruett et al; col. 5, lines 15-25].

Regarding claims 15, 27, 31, the limitations are shown above.

Response to Arguments

12. Applicant's arguments filed April 04, 2004 have been fully considered but they are not persuasive.

Applicant's argument—"Dunn et al teaches that , once deactivated, the echo canceller is not later reassigned to the channel in the event that a substantial amount of echo energy is later introduced into the channel" on page 14, lines 4-6.

Examiner's response—The Examiner respectfully disagreed. The above statement of Dunn et al simply means that, at the time the echo canceller was deactivated, echo cancellation is not required in that channel. Fig. 3 shows that the allocation/deactivation/reallocation of echo cancellers is a continuous process irrespective of channels. This monitoring of the state of echo cancellation using every sample of a transmitted signal is continuously being performed at step 314 thru step-338 [Fig. 3].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (703)-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2644



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SUPERVISORY PATENT EXAMINER